

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 12390730/EJH/ar	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/AU2003/001723	International filing date (day/month/year) 23 December 2003	(Earliest) Priority Date (day/month/year) 23 December 2002
Applicant MURDOCH CHILDRENS RESEARCH INSTITUTE et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (See Box II).

4. With regard to the title, ☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

Genetic therapy and genetic modification using neocentromeric minichromosomes

5. With regard to the abstract, ☒ the text is approved as submitted by the applicant

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ None of the figures

☐ because the applicant failed to suggest a figure

☐ because this figure better characterizes the invention

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2003/001723

A. CLASSIFICATION OF SUBJECT MATTER												
Int. Cl. ⁷ : C12N 15/90 15/85 15/79 15/12												
According to International Patent Classification (IPC) or to both national classification and IPC												
B. FIELDS SEARCHED												
Minimum documentation searched (classification system followed by classification symbols) SEE ELECTRONIC DATABASES												
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched SEE ELECTRONIC DATABASES												
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPIDS, BIOSIS, CAPLUS, MEDLINE (artificial, engineer?, synthetic, mardel marker, minichromosome, chromosome, neocentromer?, pericentromer?, centromer?, vector, expressi?, gene, heterologous, therapy, transcription)												
C. DOCUMENTS CONSIDERED TO BE RELEVANT												
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
X	US 6348353 B (Harrington et al) 19 February 2002 See whole document, especially Cols 1-17.	1-6, 8-13, 15, 17-21										
X	WO 2000 055325 A (THE UNIVERSITY OF CHICAGO) 21 September 2000. See whole document, especially pp52-102 and Examples.	1, 2, 5, 8, 9, 12, 15, 17										
X	WO 1998 051790 A (AMRAD OPERATIONS PTY LTD) 19 November 1998. See whole document.	1-22										
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex												
<ul style="list-style-type: none"> • Special categories of cited documents: <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent but published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention											
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone											
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art											
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family											
"P" document published prior to the international filing date but later than the priority date claimed												
Date of the actual completion of the international search 11 March 2004		Date of mailing of the international search report 18 MAR 2004										
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929		Authorized officer DAVID OLDE Telephone No: (02) 6283 2569										

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2003/001723

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Wong, L.H. <i>et al.</i> 2002. Construction of neocentromere-based human minichromosomes for gene delivery and centromere studies. <i>Gene Therapy</i> . 9:724-726. See whole document.	1-22
X	Saffery, R. <i>et al.</i> 2001. Construction of neocentromere-based human minichromosomes by telomere-associated chromosomal truncation. <i>Proceedings of the National Academy of Sciences USA</i> . 98(10):5705-5710. See whole document.	1-22
X	Willard, H.F. <i>et al.</i> 2001. Neocentromeres and human artificial chromosomes: An unnatural act. <i>Proceedings of the National Academy of Sciences USA</i> . 98(10):5374-5376. See whole document.	1-22
X	Choo, K.H.A. 2001. Engineering human chromosomes for gene therapy studies. <i>TRENDS in Molecular Medicine</i> . 7(6):235-237. See whole document.	1-22
X	Saffery, R. <i>et al.</i> 2002. Strategies for engineering human chromosomes with therapeutic potential. <i>Journal of Gene Medicine</i> . 4(1):5-13. See whole document.	1-22
A	Brown, W.R.A. <i>et al.</i> 2000. Artificial chromosomes: ideal vectors? <i>TIBTECH</i> . 18:218-223. See whole document	1-22

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2003/001723

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	6348353	AU	44294/97	AU	62781/96	BR	9608586
		CA	2224114	CA	2266426	CN	1191574
		EP	0832273	EP	0929666	HU	9901072
		HU	9904203	NZ	334808	US	5695967
		US	5869294	US	2003003466	WO	9640965
		WO	9812316				
WO	2000 055325	AU	37649/00	AU	38917/00	AU	76086/98
		BR	0009119	CA	2362897	EP	0986648
		EP	1165792	EP	1176864	US	6156953
		US	2003124561	US	2003131372	WO	0054574
		WO	9855637				
WO	1998 051790	AU	73258/98	EP	0996719	US	6265211
		US	2003096398				
END OF ANNEX							